Centre Number			Candidate Number		
Surname					
Other Names					
Candidate Signature					

Д	Q	A	
		<i> </i>	

General Certificate of Secondary Education June 2015

45204

Information and Communication Technology (Short Course)

Unit 1 Systems and Applications in ICT

Wednesday 13 May 2015 9.00 am to 10.00 am

You will need no other materials.

You may use a calculator.

Time allowed

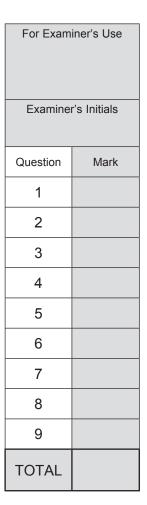
• 1 hour

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer eight questions in total.
- Answer all questions in Sections A and B. In Section C answer either Question 8 or Question 9, which should be answered in continuous prose. In this question you will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.



	Section A	
	Answer all questions in the spaces provided.	
1	For parts (a) to (f), write the letter for your answer in the box given.	
1 (a)	Which one of the following is an input device?	
	A Flash memory B Inkjet printer C Microphone D Monitor	[1 mark]
	Answer	
1 (b)	Which one of the following is an output device?	
	 A Dial-up modem B Digital projector C DVD-ROM D Graphics tablet 	[1 mark]
	Answer	
1 (c)	Which one of the following is a storage medium?	
	A Hard disk B Keyboard C Scanner D SMS	[1 mark]
	Answer	



1 (d)	Which one of the following best describes the scrambling of data so that it ap meaningless until unscrambled using a key?	pears	
	 A Encryption B Image/code recognition C Security question D Selective drop-down menu 	[1 mark]	
	Answer		
1 (e)	For which one of the following is an Internet user most likely to use a forum?		
	 A Discuss a topic that interests them B Make a telephone call C Send a fax 		
	D Use route guidance	[1 mark]	
	Answer		
1 (f)	Which one of the following is a common feature of presentation software?		
	A Cookie B Search criteria C Timing D Use a formula	[1 mark]	
		[1 1114111]	
	Answer		
			L
	Turn over for the next question		



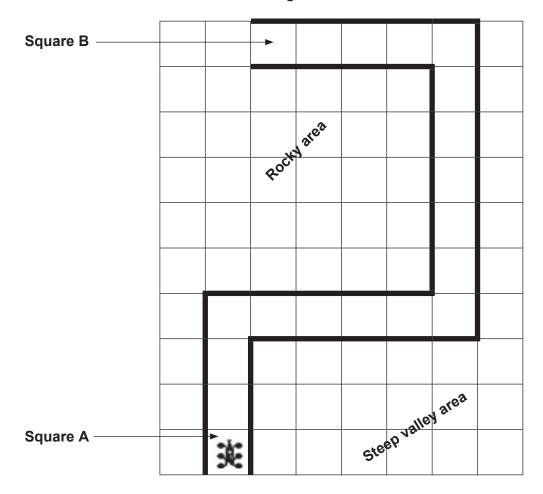
A computer controlled robotic rover called Nomad has been launched to the planet Mars to photograph areas of interest. Table 1 below shows the list of commands available to move Nomad.

Table 1

Command	Action taken by Nomad robot
Start	The robot starts to move from the square shown on the diagram.
Fdx	Moves the robot forward <i>x</i> squares. For example Fd1 would move the robot forward 1 square.
Lt90	Turns the robot left 90 degrees.
Rt90	Turns the robot right 90 degrees.
End	Ends the commands.

Shown below in **Figure 1** is the path Nomad must follow to avoid the steep valley and rocky areas to reach **Square B**. The starting point is **Square A**.

Figure 1





2 (a)	Write the commands that will move the robot safely by following the path from Square A to Square B . Nomad is currently facing in the correct direction. Refer to Table 1 and Figure 1 .	
	[3 marks]	
2 (b)	Explain why commands must be accurate when controlling devices such as robots. [2 marks]	
		Г
	Turn over for the next question	



- **3 (a)** People can use graphics software packages to create images.
- **3 (a) (i)** Tick **one** box to show which feature would be best to remove sections drawn by mistake.

[1 mark]

	Tick one box only
Erasing	
Layering	
Morphing	
Repeating	
Rotating	
Shading	

3 (a) (ii) Tick **one** box to show which feature would be best to produce the effect of one picture transforming into another picture.

[1 mark]

	Tick one box only
Erasing	
Layering	
Morphing	
Repeating	
Rotating	
Shading	

3 (a) (iii) Tick **one** box to show which feature would be best to turn an image clockwise or anti-clockwise.

[1 mark]

	Tick one box only
Erasing	
Layering	
Morphing	
Repeating	
Rotating	
Shading	



Erasing Layering Morphing Repeating Rotating	Tick one box only				
Layering Morphing Repeating					
Morphing Repeating					
Repeating					
Rotating					
Shading					
Describe what the photographic im	he term 'airbrushi ages.	ng' means w	/hen manipula	ating the lo	ok of [2 mark

Turn over for the next question



- 4 Many students use the Internet to gather data when completing school projects.
- **4 (a)** Tick **one** box that shows the most sensible way to check information on a website is accurate.

[1 mark]

	Tick one box only
Access only older websites	
Compare with other reliable sources	
Install a firewall	
Use a search engine	

4 (b)	Organisations use data validation to reduce data entry errors.	Give a suitable reason
	why data validation cannot be relied on to prevent all errors.	

[1 mark]

4 (c) A mobile phone shop uses the data validation method shown below, to ensure only valid options are entered in the Phone Colour field of their products database.



Tick **one** box that shows the name of the type of data validation shown above.

[1 mark]

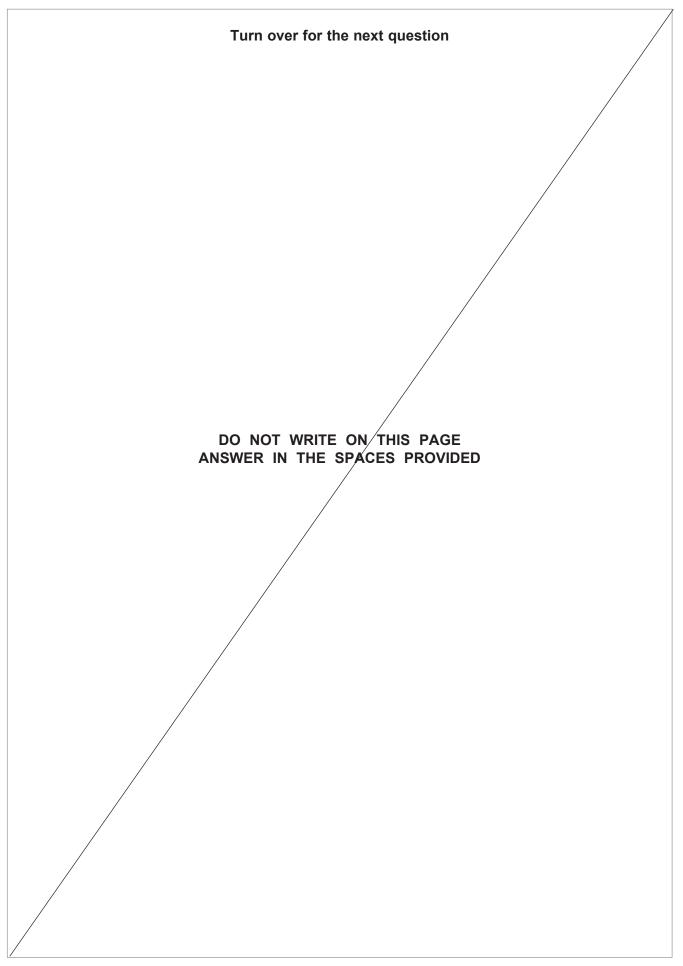
	Tick one box only
Check digit	
Look-up list	
Presence check	
Range check	



(d) (i)	Name one method of date	a verification.	[1 mark]
d) (ii)		d of data verification given in your ans	swer above could be used
	to improve the accuracy	of data.	[2 marks]
(e)	Tick one box that best de onto a membership card.	escribes a method of inserting the co	ntents of database fields [1 mark]
		Tick one box only	
	Mail merge		
	Mail protection		
	Mail range		
	Mail service		
(f)	can have on the environr Give two alternative apple	concerned about the effect that replacement. roaches that organisations can take to the computer equipment that ends	o minimise the harmful

5 (a)		list below shows a range of equipmer the device that best matches the defi			question,	
	A B C D	Buzzer Dongle File server Interactive whiteboard Joystick	F G H I	RFID reader Video camera VoIP Web cam		
		ose your answers from the list given given.	abov	e . Write the letter for your ans	wer in the	
5 (a) (i)	A me	ethod of using the internet to make dig	gitised	d voice telephone calls.	[1 mark]	
	Answ	ver				
5 (a) (ii)	A de	vice that gathers information from rad	lio sig	nals sent by a tag.	[1 mark]	
	Answ	ver				
5 (a) (iii)	А со	mputer that is connected to a network	c and	manages the storage of data.	[1 mark]	
	Answ	ver				
5 (b)		one disadvantage to people working munication networks such as 4G.	g in o	rganisations of using mobile	[1 mark]	
						4







Section B

Answer all questions in the space provided.

A charity runs a home for abandoned cats. The charity has carried out a number of collections to raise money in different locations around the town. Collections are carried out by four teams of people, called Red, Blue, Green and Yellow. The charity uses a spreadsheet to calculate the amount of money raised by the four teams and to calculate the Grand Total.

	А	В	С	D	E	F	G	Н	I	J
1		Cats Home Collection								
2	Team	Supermarket	High Street	School and College	Football Stadium	Lowest Amount Collected	Highest Amount Collected	Average	Team Percentage	Team Total
3	Red	£174.00	£43.00	£123.00	£204.00	£43.00	£204.00	£136.00	23.7	£544.00
4	Blue	£102.00	£53.00	£158.00	£181.00	£53.00	£181.00	£123.50	21.5	£494.00
5	Green	£155.00	£57.00	£136.00	£325.00	£57.00	£325.00	£168.25	29.3	£673.00
6	Yellow	£78.00	£82.00	£111.00	£312.00	£78.00	£312.00	£145.75	25.4	£583.00
7										
8									Grand Total	£2,294.00

6 (a) Tick **one** box to show the function that calculates the highest amount collected by each team.

[1 mark]

	Tick one box only
Average	
If	
Max	
Min	

6	(b)	(i)	Give t	he :	formula	that h	as been	used to	calculate	the te	am tota	I for th	ne Red	team.

[1	mark1
----	-------

6 (b	o) (ii)	The percentage for the Red team was calculated using the formula =J3/\$J\$8* Describe why an absolute cell reference is used.	100. [2 marks]
			[z marks]
6 (c	;)	The charity wants to gather data from people in the town. Describe the advarand disadvantages of using an online form, rather than a paper-based questic capture this data.	
			[5 marks]

Turn over for the next question



are thought to include inaccurate information. Tick two boxes which show sensible measures	s that wiki adı	ministrators o	an use to h
maintain the accuracy of information.	The Thin Ga		[2 ma
	Tick two boxes only		_
Allow users to report any inaccurate information they see			
Encrypt the information displayed on the wiki			
Keep a record of changes made and the names of the users who changed a wiki entry			
Not allow any users to make changes to wiki entries			
Use a firewall to protect the wiki servers			
Ellen Wey is a school student who uses a blog is organising to raise money for charity. Give two advantages to Ellen of using the blog			
is organising to raise money for charity.			nusic conce
is organising to raise money for charity. Give two advantages to Ellen of using the blog	g to publicise	the charity n	nusic conce
is organising to raise money for charity. Give two advantages to Ellen of using the blocompared with using posters. Advantage 1	g to publicise	the charity n	nusic conce
is organising to raise money for charity. Give two advantages to Ellen of using the blocompared with using posters.	g to publicise	the charity n	nusic conce
is organising to raise money for charity. Give two advantages to Ellen of using the blocompared with using posters. Advantage 1	g to publicise	the charity n	nusic conce
is organising to raise money for charity. Give two advantages to Ellen of using the blocompared with using posters. Advantage 1	g to publicise	the charity n	nusic conce
is organising to raise money for charity. Give two advantages to Ellen of using the blocompared with using posters. Advantage 1	g to publicise	the charity n	nusic conce
is organising to raise money for charity. Give two advantages to Ellen of using the blocompared with using posters. Advantage 1	g to publicise	the charity n	



7 (c)	Ellen Wey's teacher wants to create a new information system to store examination results. Describe, using examples, the difference between normal and extreme data when testing a computer system.
	[5 marks]

L

Turn over for the next question





Section C

You should answer either Question 8 or Question 9, but not both.

You will be marked on your ability to use good English, to organise information clearly and to use specialist vocabulary where appropriate.

Either		
8	Discuss the ways people can behave responsibly and stay safe online when using ICT-based communication.	-1 7
	[12 ma	rksj
	This space is available for planning your answer, if you wish to use it.	







12



or		
9	Discuss ways of preventing unauthorised access to computer systems.	[12 marks]
	This space is available for planning your answer, if you wish to use it.	







END OF QUESTIONS



12

